REMARKS/AGRUMENTS

This Amendment is in response to the Office Action mailed February 10, 2004. In the Office Action, claims 3, 4 and 12 were objected to as being dependent upon a rejected base claim, but would be allowable if written into independent form to include these limitations and limitations found in their respective base claims. Applicant respectfully submits herewith claims 22-31 in which independent claims 22 and 30 feature the limitations of claims 3 and 4 as well as some of the limitations of base claim 1. Similarly claim 31 features the limitations of claims 12 with some of the limitations of base claim 10. Consideration of claims 22-31 is respectfully requested.

Moreover, claims 1, 5, 6, 8, 10-11, and 14-17, 19 and 20 are rejected under 35 U.S.C. § 102(e); and claims 7, 13, and 18 are rejected under 35 U.S.C. § 103(a). Claims 11 and 17 have been cancelled without prejudice while claims 1, 10, 16, and 18 have been amended. Reconsideration in light of the amendments and remarks made herein is respectfully requested.

Rejections Under 35 U.S.C. § 102(e)

Claims 1, 5, 6, 8, 10-11, and 14-17, 19 and 20 are rejected under 35 U.S.C. §102(e) as being anticipated by Schmookler (U.S. Patent No. 6,178,435). As the Examiner is aware, in order to anticipate a claim under §102(e), Schmookler must teach every element of the claim. "A claim is anticipated *only if each and every element as set forth in the claim is found, either expressly or inherently described*, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (Emphasis added). Applicant submits that claims 1, 5, 6, 8, 10-11, and 14-17, 19 and 20 are not anticipated by Schmookler. In regard to the rejection of these claims, the Examiner has stated in part that:

> Schmookler discloses a computing system having (figure 3) ...including means (11), corresponding to the claimed rounding apparatus, for generating xI, as the claimed rounded value $X_{integer}$....

(2/10/04, Office Action, p. 2)

Applicant respectfully disagrees with the Examiner. Claim 1 recites the feature of "*a rounding apparatus to accept an input value (X) that is a real number represented in floating-point format, and to compute a rounded value ($\lfloor X \rfloor_{integer}$) by rounding the input value (X) **using a floor technique**"*. (Emphasis added) In the "floor" technique, a real number would generally be rounded to the next integer. For example, +1.5 would be rounded down to 1, and −1.90 would be

9

rounded down to –2. (Specification, p.5, ll. 20-23) This feature is not disclosed by Schmookler. <u>Schmookler</u> teaches a method for performing a power of two estimation on a floating-point number described by a sign bit, exponent bits and mantissa bits. (Schmookler, col. 2, ll. 34-37) The mantissa is partitioned into an integer part and a fraction part, based on the value of the exponent bits. (Schmookler, col. 3, ll. 17-20) In particular Schmookler *shifts the mantissa of x to the right until the first eight bit positions contain only the integer part of x* and the remaining bit-positions of the mantissa contain the fractional part of x. (Schmookler, col. 4, ll. 31-35) The method described by Schmookler --of shifting the manitissa of x – results in separating out the integer portion of the mantissa. However, this is not *rounding the input value (X) using a floor technique* as claimed by applicant in claim 1. For example, Schmookler's method when applied to the number –1.90 would result in –1, whereas use of the floor technique results in a value of – 2, as described above.

Because, Schmookler does not disclose "the feature of *a rounding apparatus to accept an input value (X) that is a real number represented in floating-point format, and to compute a rounded value (⌊X⌋ₙₜₑgₑᵣ) by rounding the input value (X) using a floor technique* as taught by claim 1, and given that claims 3-9 depend from claim 1, applicant respectfully submits that claims 1 and 3-9 are not anticipated under 35 U.S.C. § 102(e) by Schmookler.

The Examiner also rejected claim 10 under 35 U.S.C. §102(e) for the reasons set forth in the rejection of claim 1. Claim 10 discloses substantially similar limitations as claim 1 and recites the feature of *"generating a first rounded value and a second rounded value, wherein generating the first rounded value comprises rounding an input value (X) using a floor technique...."* (emphasis added). Because Schmookler does not disclose this feature as taught by claim 10 for the reasons discussed above, and given that claims 12-15 depend from claim 10, applicant respectfully submits that claims 10 and 12-15 are not anticipated under 35 U.S.C. §102(e) by Schmookler.
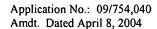
The Examiner also rejected claim 16 under 35 U.S.C. §102(e) for the reasons set forth in the rejection of claim 1. Claim 16 discloses substantially similar limitations as claim 1 and recites the feature of *"a second code segment to accept an input value (X) that is a real number represented in floating-point format, to compute a rounded value (⌊X⌋ₙₜₑgₑᵣ) by rounding the input value (X) using a floor technique...."* (emphasis added). Because Schmookler does not disclose this feature as taught by claim 16 for the reasons discussed above, and given that claims 18-21 depend from claim 16, applicant respectfully submits that claims 16 and 18-21 are not anticipated under 35 U.S.C. §102(e) by Schmookler.

Rejections Under 35 U.S.C. § 103(a)

Claims 7, 13 and 18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Schmookler and the alleged knowledge in the art. In regard to the rejection of claim 7 under 35 U.S.C. §103(a), applicant submits the pending claims are not obvious in view of Schmookler and the alleged knowledge. Even if Schmookler and the alleged knowledge were combined, such a combination would lack one or more features of claim 1 from which claim 7 depends. Claim 1 recites the feature of *"a rounding apparatus to accept an input value (X) that is a real number represented in floating-point format, and to compute a rounded value ($\lfloor X \rfloor_{integer}$) by rounding the input value (X) using a floor technique...."* (Emphasis added) This feature is not disclosed by Schmookler for the reasons stated above in regard to the rejection of claim 1. Nor does the alleged knowledge disclose *"a rounding apparatus to accept an input value (X) that is a real number represented in floating-point format, and to compute a rounded value ($\lfloor X \rfloor_{integer}$) by rounding the input value (X) using a floor technique...."* as claimed by applicant. Thus, because neither, Schmookler nor the alleged knowledge disclose applicant's claim 1, applicant respectfully submits that claim 1 is not obvious under 35 U.S.C. §103(a) by Schmookler in view of the alleged knowledge. Given that claims 3-9 depend from claim 1, applicant respectfully submits that claims 1, and 3-9 are not obvious under 35 U.S.C. §103(a) by Schmookler, in view of the alleged knowledge.

The Examiner also rejected claim 13 under 35 U.S.C. §103(a) for the reasons set forth in the rejection of claim 7. Claim 10 from which claim 13 depends, discloses substantially similar limitations as claim 1 and recites the feature of *"generating a first rounded value and a second rounded value, wherein generating the first rounded value comprises rounding an input value (X) using a floor technique...."* (emphasis added). Because neither Schmookler, nor the alleged knowledge disclose this feature as taught by claim 10 for the reasons discussed above, and given that claims 12-15 depend from claim 10, applicant respectfully submits that claims 10 and 12-15 are not made obvious under 35 U.S.C. §103(a) by Schmookler in view of the alleged knowledge.

The Examiner also rejected claim 18 under 35 U.S.C. §103(a) for the reasons set forth in the rejection of claim 7. Claim 16 from which claim 18 depends, discloses substantially similar limitations as claim 1 and recites the feature of *"a second code segment to accept an input value (X) that is a real number represented in floating-point format, to **compute a rounded value** ($\lfloor X \rfloor_{integer}$) by rounding the input value (X) using a floor technique...."* (emphasis added). Because neither Schmookler, nor the alleged knowledge disclose this feature as taught by claim 16 for the reasons discussed above, and given that claims 18-21 depend from claim 16, applicant

respectfully submits that claims 16 and 18-21 are not made obvious under 35 U.S.C. §103(a) by Schmookler in view of the alleged knowledge.

Moreover, the Examiner rejected claim 9 under 35 U.S.C. § 103(a) as being unpatentable over <u>Schmookler</u> in view of <u>Abe</u> (U.S. Patent No. 6,049,343). In regard to the rejection of claim 9 under 35 U.S.C. §103(a) applicant submits the pending claims are not obvious in view of Schmookler and Abe. Even if Schmookler and Abe were combined, such a combination would lack one or more features of claim 1 from which claim 9 depends. Claim 1 recites the feature of *"a rounding apparatus to accept an input value (X) that is a real number represented in floating-point format, and to compute a rounded value ($\lfloor X \rfloor_{integer}$) by rounding the input value (X) **using a floor technique....**"* (Emphasis added) This feature is not disclosed by Schmookler for the reasons stated above in regard to the rejection of claim 1.

Nor does Abe disclose *"a rounding apparatus to accept an input value (X) that is a real number represented in floating-point format, and to compute a rounded value ($\lfloor X \rfloor_{integer}$) by rounding the input value (X) **using a floor technique....**"* as claimed by applicant. Abe describes a graphics processing unit and graphics processing system. (Abe, title) However, nowhere in Abe does he discuss rounding or using a floor technique. Thus, because neither, Schmookler nor Abe disclose applicant's claim 1, applicant respectfully submits that claim 1 is not obvious under 35 U.S.C. §103(a) by Schmookler in view of Abe. Given that claims 3-9 depend from claim 1, applicant respectfully submits that claims 1, and 3-9 are not obvious under 35 U.S.C. §103(a) by Schmookler, in view of Abe.

The Examiner also rejected claim 21 under 35 U.S.C. §103(a) for the reasons set forth in the rejection of claim 9. Claim 16, from which claim 21 depends, discloses substantially similar limitations as claim 1 and recites the feature of *"a second code segment to accept an input value (X) that is a real number represented in floating-point format, to **compute a rounded value** ($\lfloor X \rfloor_{integer}$) **by rounding the input value (X) using a floor technique....**"* (emphasis added). Because neither Schmookler, nor Abe disclose this feature as taught by claim 16 for the reasons discussed above, and given that claims 18-21 depend from claim 16, applicant respectfully submits that claims 16 and 18-21 are not made obvious under 35 U.S.C. §103(a) by Schmookler in view of Abe.

Conclusion

Applicant respectfully requests that a timely Notice of Allowance be issued in this case. Accordingly, applicant submits that the Examiners objections, and rejections under 35 U.S.C. §102(e) and 35 U.S.C. §103(a) have been overcome by the amendments and the remarks and withdrawal of these objections and rejections is respectfully requested. Applicant submits that the pending claims are now in condition for allowance and such action is earnestly solicited.

If there are any additional charges, please charge them to our Deposit Account No. 02-2666.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Date: April 8th, 2004   Sanjeet Dutta

Sanjeet K. Dutta
Reg. No. 46,145

12400 Wilshire Blvd.
Seventh Floor
Los Angeles, CA 90025
(408) 947-8200